

## CLAIMS

1. A moving picture prediction method for predicting pixel values in a picture that forms a moving picture based on pixel values in two reference pictures, the method comprising:

5 a first parameter calculation step of calculating a first parameter corresponding to a distance between a current picture and a first reference picture;

a second parameter calculation step of calculating a second parameter corresponding to a distance between the first reference picture and a second reference picture;

10 a first judgment step of judging whether a third parameter calculated based on the first and the second parameters is included in a predetermined range or not;

a first prediction step of calculating pixel values in the current picture by scaling based on the first and the second parameters and pixel values in the first and the second reference pictures when a result of the judgment in the first judgment step shows that the third parameter is included in the predetermined range; and

15 a second prediction step of calculating pixel values in the current picture by scaling based on predetermined values and pixel values in the first and the second reference pictures when a result of the judgment in the first judgment step shows that the third parameter is not included in the predetermined range.

25 2. The moving picture prediction method according to Claim 1 further comprising:

a second judgment step of judging whether the first parameter is included in a predetermined range or not,

30 wherein the second prediction step is executed when a result of the judgment in the second judgment step shows that the first parameter is not included in the predetermined range.

3. The moving picture prediction method according to Claim 1 further comprising:

a third judgment step of judging whether the second parameter is included in a predetermined range or not,

5 wherein the second prediction step is executed when a result of the judgment in the third judgment step shows that the second parameter is not included in the predetermined range.

4. The moving picture prediction method according to Claim 1 further comprising:

10 a first picture judgment step of judging whether the first reference picture is a predetermined picture or not,

15 wherein the second prediction step is executed when a result of the judgment in the first picture judgment step shows that the first reference picture is not the predetermined picture.

5. The moving picture prediction method according to Claim 1 further comprising:

20 a second picture judgment step of judging whether the second reference picture is a predetermined picture or not, and

wherein the second prediction step is executed when a result of the judgment in the second picture judgment step shows that the second reference picture is not the predetermined picture.

25 6. The moving picture prediction method according to Claim 1, wherein, in the first prediction step, pixel values in the current picture are calculated by the scaling with reference to a look-up table that associates the first parameter with the reciprocal of the first parameter.

30 7. A moving picture coding method for coding a moving picture comprising:

a prediction step of predicting pixel values using the moving picture prediction method according to any one of Claims 1 to 6; and

a coding step of coding pixel values in a moving picture based on the prediction.

5

8. A moving picture coding apparatus that codes a moving picture comprising:

a prediction unit operable to predict pixel values using the moving picture prediction method according to any one of Claims 1 to 6; and

10

a coding unit operable to code pixel values in a moving picture based on the prediction.

9. A program for coding a moving picture, the program causing a computer to execute:

15

a prediction step of predicting pixel values using the moving picture prediction method according to any one of Claims 1 to 6; and

a coding step of coding pixel values in a moving picture based on the prediction.

20

10. A moving picture decoding method for decoding a moving picture comprising:

a prediction step of predicting pixel values using the moving picture prediction method according to any one of Claims 1 to 6; and

25

a decoding step of decoding pixel values in a moving picture based on the prediction.

11. A moving picture decoding apparatus that decodes a moving picture comprising:

30

a prediction unit operable to predict pixel values using the moving picture prediction method according to any one of Claims 1 to 6; and

a decoding unit operable to decode pixel values in a moving picture based on the prediction.

12. A program for decoding a moving picture, the program  
5 causing a computer to execute:

a prediction step of predicting pixel values using the moving picture prediction method according to any one of Claims 1 to 6; and

a decoding step of decoding pixel values in a moving picture based on the prediction.